UpNext

ASCEND

The first step towards cryogenic electric propulsion

ASCEND intends to demonstrate the potential and feasibility of a cryogenic and superconducting powertrain to breakthrough aircraft electric propulsion performances.

AIRBUS

PURPOSE

Boost Airbus by **accelerating future technologies**

VISION

Fly the future of aerospace, Incubate talent, Inspire Airbus transformation

AMBITION 2025

Be THE reference for Technology Value Assessment
Be recognized as an inspiring place to work
Act as entrepreneurs

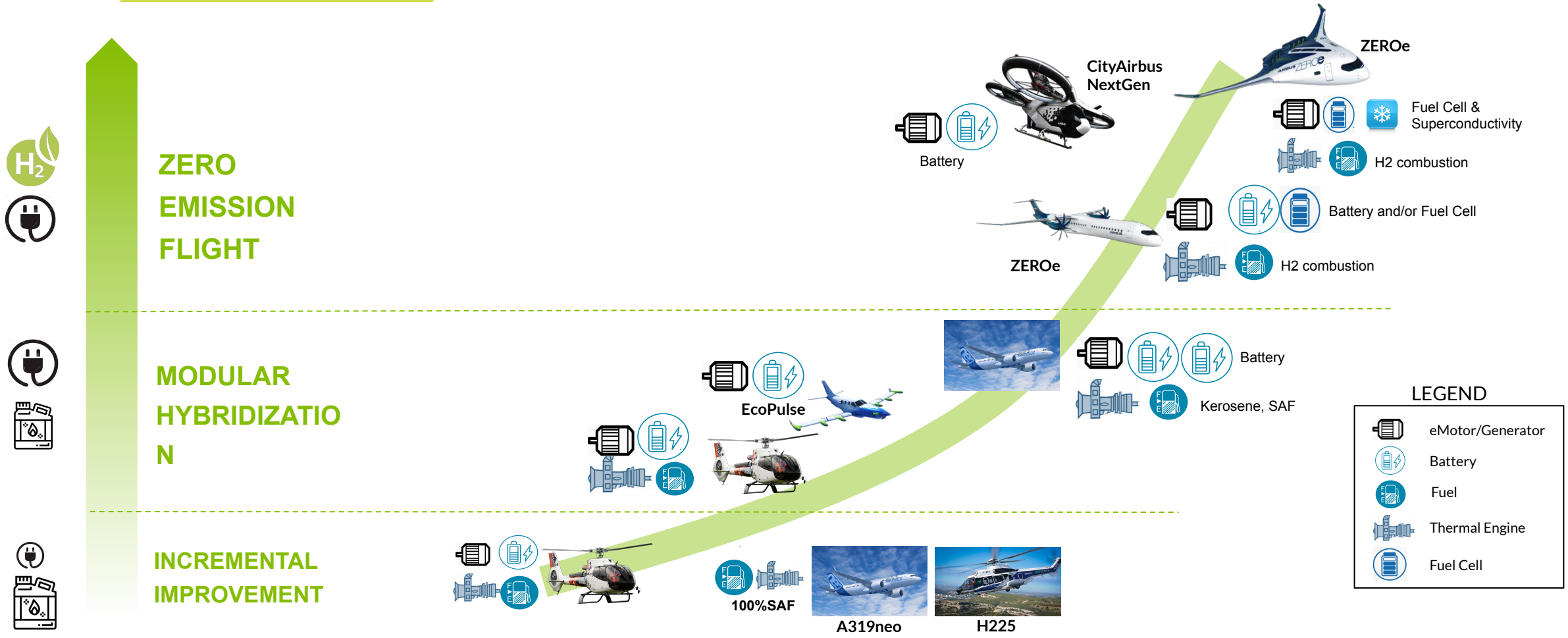
VALUES Keep it Simple, Be Audacious, Exploring Together
Mindset

DNA Speed Of Execution, Caring for Each Other, Open to the World
Unique value proposition

UpNext

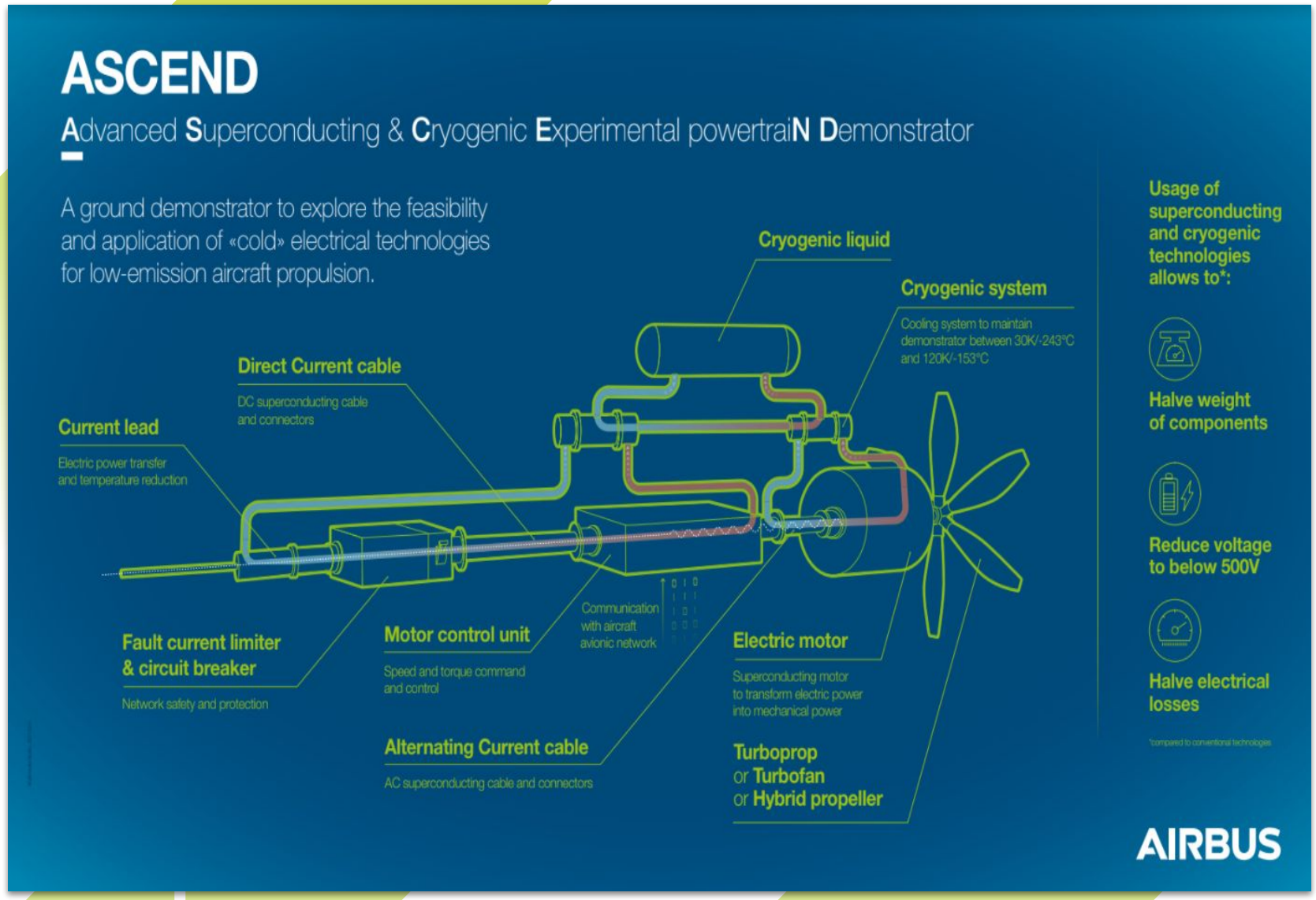
AIRBUS

Energy-related technologies to reduce aviation's carbon footprint



AIRBUS

A Superconducting Powertrain 300V/ 500kW



3 years
to
Breakthrough high power electric systems

- Low voltage (< 500V)
- Reduce weight and volume
- Increase efficiency (+ 5-10%)
- Enable high torque motors, fault current limiters

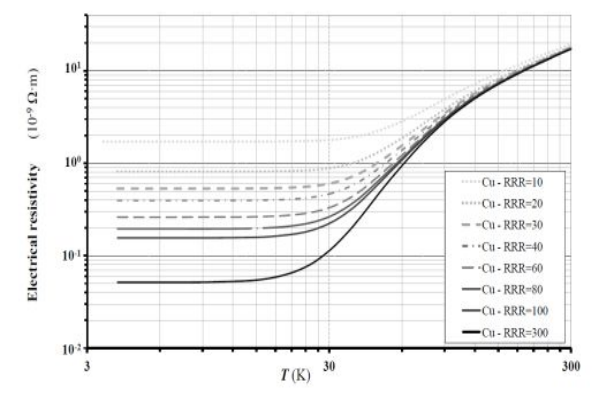
For Propulsive & Non-propulsive systems

AIRBUS

Cryogenic technologies?

Cryogenic

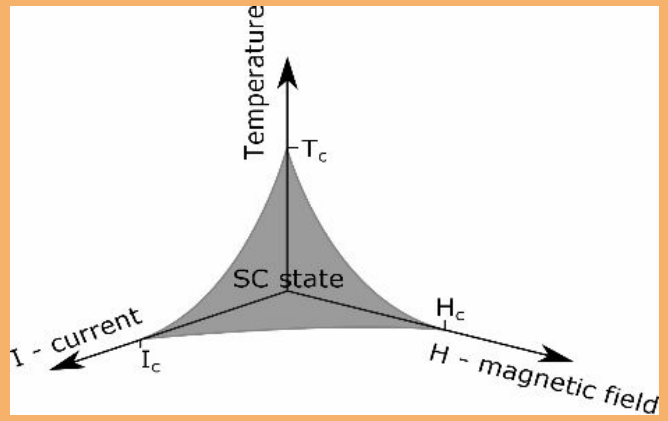
Conventional techno at low temperatures



→ **losses divided by 3 to 5**
→ increase thermal properties

Superconductivity

Specific materials below 3 parameters



→**no DC losses**
→ Carry >100 times more current than copper
→ Perfect diamagnetism

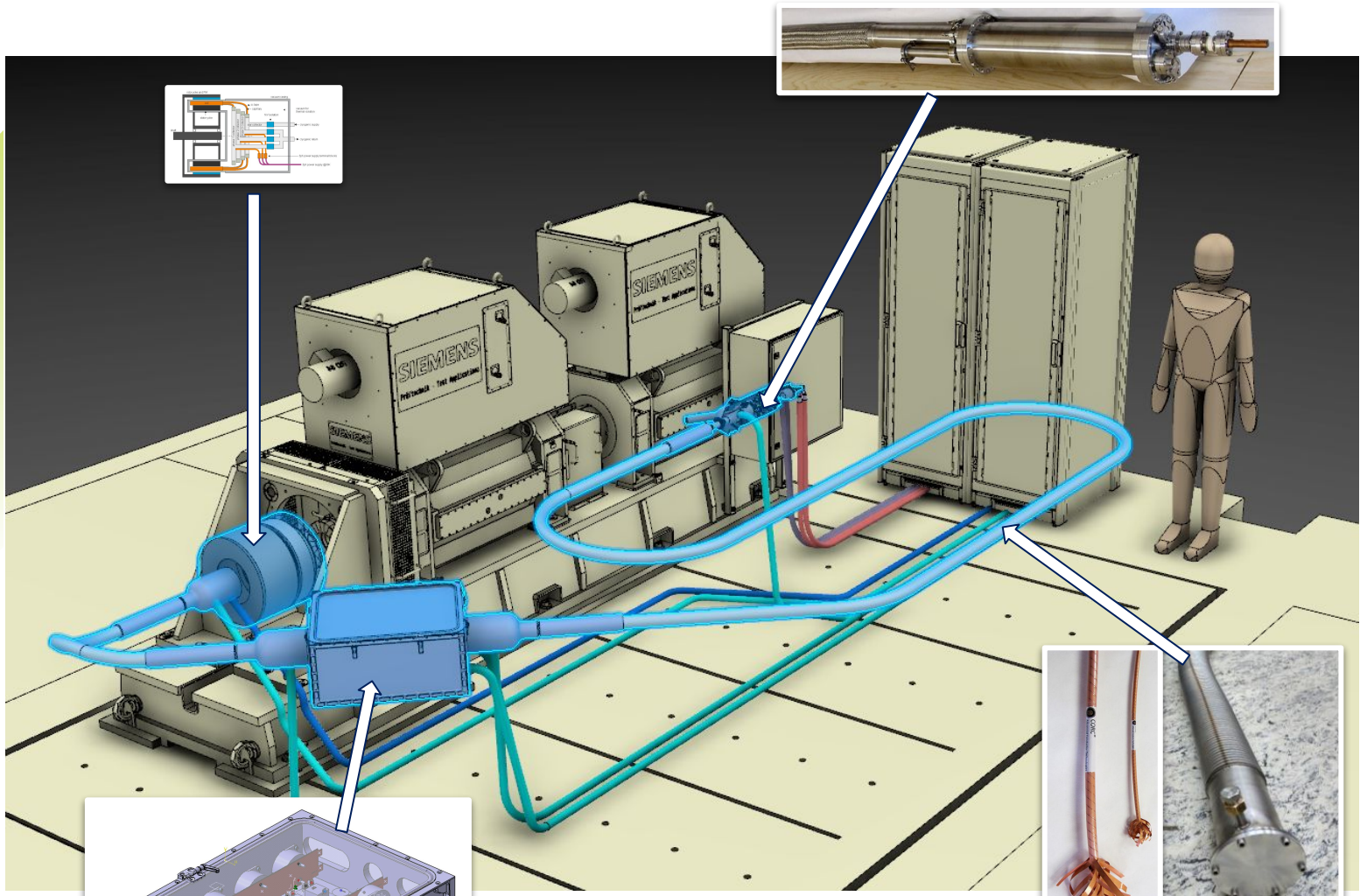
An opportunity for electrical systems

Reduce weight & volume

Increase efficiency & Current density

AIRBUS

Demonstrator development



Good progress on Preliminary design

- No showstopper
- Electrical performances above expectations

but

- Challenges on cryogenic components

AIRBUS